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(58) Field of Search

UK CL (Edition T) **B8P PG1**

INT CL<sup>7</sup> **B65D 5/54**

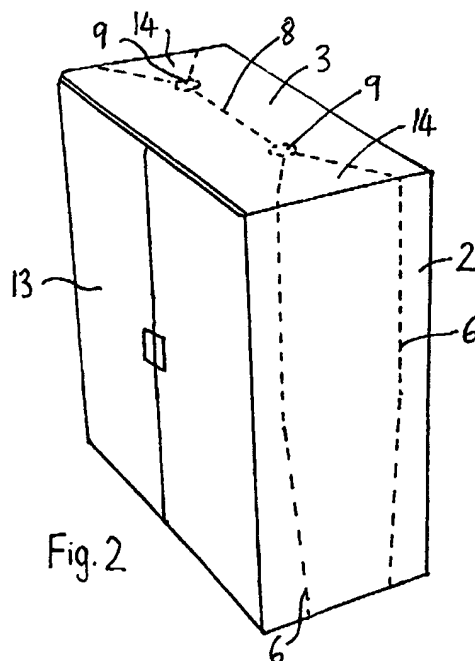
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**XTUS1,XTUS2,XTUS3,XTXEP1,XTXGB1,XTXWO1**

(54) Abstract Title

**Packaging carton, blank and opening method**

(57) A packaging carton comprises opposed first and second wall panels (2, 4) extending upwardly from a base panel (1) and a top panel (3) extending between said first and second wall panels. Two lines of perforations (6) extending from a first edge of the base panel, traversing the first wall panel (2), the top panel (3) and the second wall panel (4) to a second edge of the base panel (1). The tear lines (6) merge in the top panel (3). On tearing the tear lines (6) and rolling down strips formed between them, the carton can be opened by separating parts of each of the first and second wall panels (2,4) and the top panel (4). Push out removable discs (9) may facilitate opening.



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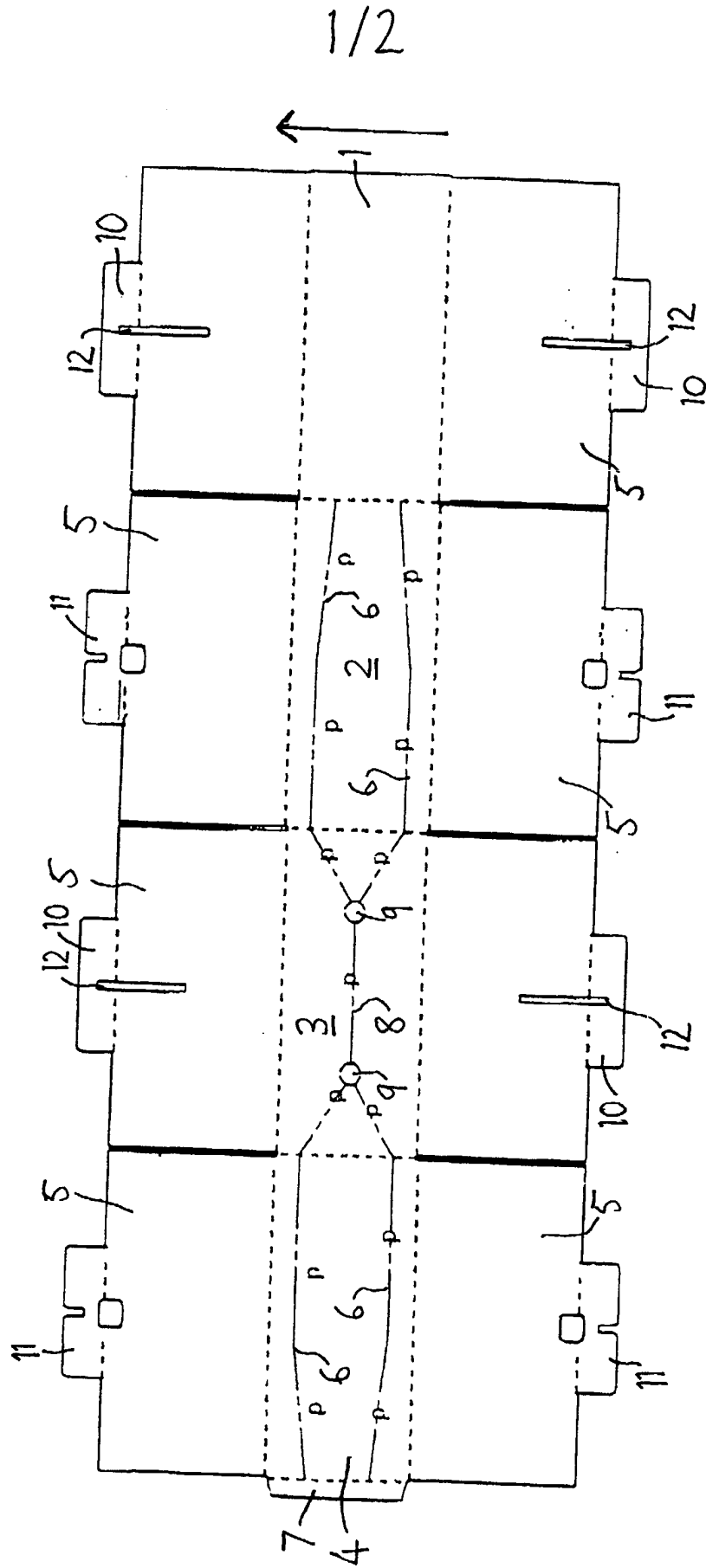
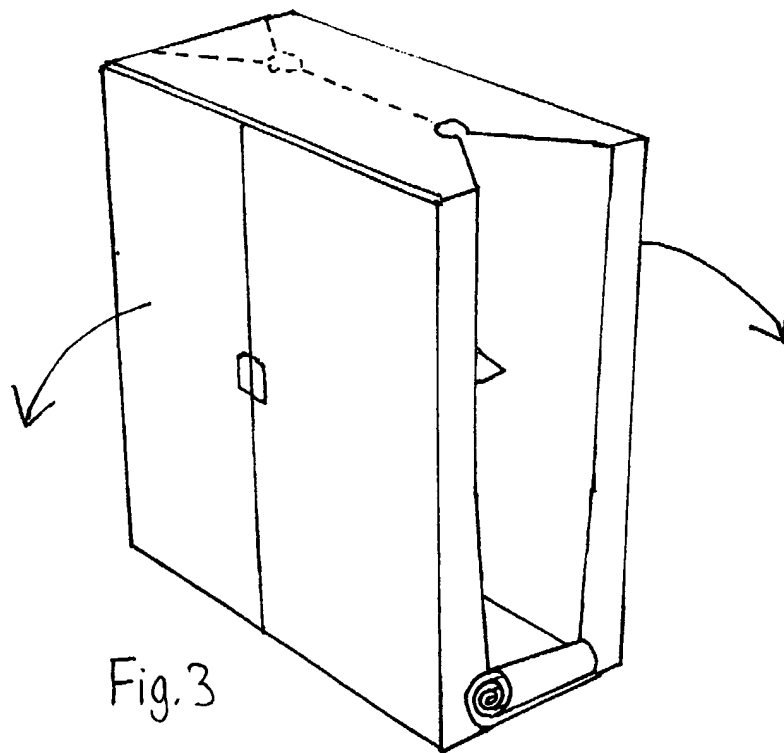
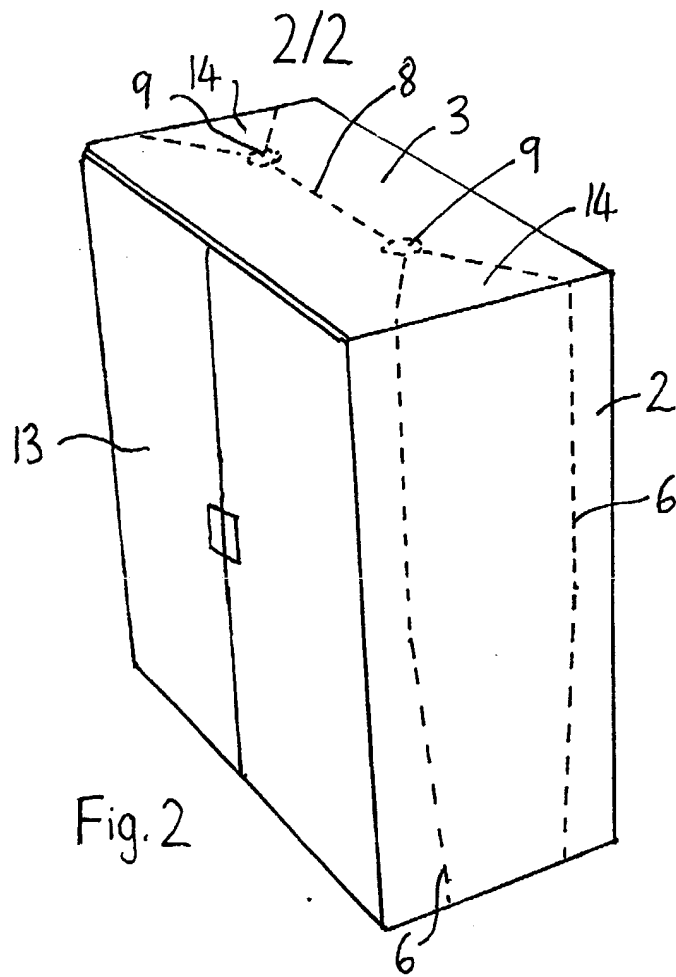


Fig. 1



**PACKAGING CARTON, BLANK AND OPENING METHOD**

The present invention relates to a packing carton, a blank for forming the carton and a method of opening the carton.

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The invention is particularly, but not exclusively, applicable to large, heavy-duty cartons. It is often desirable to open such a carton wide, preferably almost to a flat condition so that a large object contained in the carton can be extracted easily.

10 Accordingly, from a first aspect, the present invention provides a packaging carton comprising a base panel, opposed first and second wall panels extending upwardly from the base panel, a top panel extending between said first and second wall panel, and tear means extending from a first edge of said base panel, traversing said first wall panel, said top panel and said second wall panel to a second edge of said base panel,  
15 such that on tearing the tear means the carton can be opened by separating parts of each of the first and second wall panels and top panel.

In a preferred embodiment, the tear means comprises two tear lines, such as lines of perforations, extending through each of the first and second wall panels. Preferably,  
20 the tear lines are intended to be torn by rolling down the strip between said two tear lines.

For enhanced strength, preferably said two tear lines merge in the top panel into a single tear line.

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In order to facilitate commencement of the tearing operation, at least one removable portion, which may be surrounded by perforations, is preferably formed at a suitable point in the tear means. For example, a removable portion may be formed at each of the points where the two tear lines merge into a single tear line.

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One advantage of the invention is that it can be used to provide a tamper-evident package, which can only be opened by tearing in an obvious and irreversible manner.

In a particular embodiment of the invention suitable for packaging a reel of wire or the like, opposed third and fourth wall panels of the carton, extending perpendicular to said first and second wall panels, comprise projections for engaging ends of the reel.

- 5 From a second aspect, the invention provides a blank of stiff but foldable board material for forming a packaging carton, comprising a base panel, opposed first and second wall panels intended to extend from the base panel, a top panel extending between said first and second wall panel, and tear means extending from a first edge of said base panel, traversing said first wall panel, said top panel and said second wall  
10 panel and intended to extend to a second edge of said base panel.

Preferably, the blank includes means for forming each of the features of the finished carton defined above.

- 15 From a third aspect, the invention provides a method of opening a packaging carton having two tear lines in at least one panel thereof, the method comprising rolling a portion of the panel between the tear lines so as to tear the tear lines.

- Preferably, the method comprises a further step of separating the remaining portions of  
20 the panel outside the tear lines.

The present invention will now be described in more detail, by way of example only, with reference to the accompanying drawings, in which:

- 25 Figure 1 is a plan of a blank according to the invention;

Figure 2 shows a carton formed for the blank of Figure 1; and

Figure 3 shows the carton of Figure 2 in the process of being opened.

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The drawings show an example of a blank and a carton intended for packaging a reel of wire, which may for example have a diameter of 700 mm. The wire is very sensitive to pressure and must therefore be adequately protected.

Figure 1 shows a blank which has been cut from double-wall corrugated paperboard, i.e. board having two sets of flutes, which run in the direction of the arrow. The blank comprises rectangular panels defined by crease lines (shown dotted), namely a base panel 1, a first wall panel 2, a top panel 3 and a second wall panel 4, all in a series, and  
 5 side panels 5 extending on either side of each of the base, wall and top panels 1 to 4.

The first and second wall panels 2, 4 each include two substantially parallel perforated tear lines 6, the perforations being designated by p. The tear lines in the first wall panel 2 run from the edge of the top panel 3 to the edge of the base panel 1. The tear lines 6  
 10 in the second wall panel 4 run from the edge of the top panel 3 to an edge which will be attached to the base panel 1 by means of a tab 7. In the top panel 3, the tear lines 6 merge into a single tear line 8. At each of the two merge points a removable disc 9 is formed by a circle of perforations.

15 The side panels 5 include flaps 10, 11 for forming cross-shaped projections intended to engage the ends of a reel. Alternate ones 10 of the flaps are formed with slots 12 through which the other flaps 11 extend in use.

As supplied to a customer, the blank is folded flat with the tab 7 glued to the free edge  
 20 of the base panel 1. In order to package a reel, a customer folds the blank and forms a third wall panel 13 (shown in Figure 2) from one set of the side panels 5 by fitting together the respective flaps 10, 11 to hold the side panels 5 in place, simultaneously forming a cross-shaped projection from the flaps 10, 11. The reel is placed on this projection and a fourth wall panel (not shown) is formed from the remaining side  
 25 panels 5, with a further cross-shaped projection extending into the other end of the reel. The carton now appears as shown in Figure 2.

The flaps on the side panels could alternatively be designed to lock together such that the finished carton could only be opened by tearing, thus providing tamper-evidence.

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The carton can easily be opened by pushing out the removable discs 9, pulling up the triangular flaps 14 formed by the merging tear lines in the top panel 3 and then rolling down the central portion of each of the first and second wall panels 2, 4 so as to tear the

lines 6. After one such portion has been rolled down, the carton appears as shown in Figure 3.

5 After having rolled down both central portions and torn the single tear line 8 in the top panel 3, the third and fourth wall panels can be folded down as shown by the arrows in Figure 3, thus pulling the carton away from the packaged product, which can simply be lifted away.

10 Whilst the specific embodiment of the invention described above is a carton for packaging a reel of wire, it should be emphasised that the invention is by no means limited to such an application. The invention extends to cartons for packaging a wide variety of products. Cartons according to the invention are particularly apt for packaging large objects such as television sets and white goods, but are useful for packaging smaller items as well.

**CLAIMS**

1. A packaging carton comprising a base panel, opposed first and second wall panels extending upwardly from the base panel, a top panel extending between said first and second wall panel, and tear means extending from a first edge of said base panel, traversing said first wall panel, said top panel and said second wall panel to a second edge of said base panel, such that on tearing the tear means the carton can be opened by separating parts of each of the first and second wall panels and top panel.
2. A carton according to claim 1, wherein the tear means comprises two tear lines, extending through each of the first and second wall panels.
3. A carton according to claim 2, wherein each of the tear lines is a line of perforations.
4. A carton according to claim 2 or 3, wherein the tear lines are intended to be torn by rolling down the strip between said two tear lines.
5. A carton according to claim 2, 3 or 4, wherein said two tear lines merge in the top panel into a single tear line.
6. A carton according to any preceding claim, wherein at least one removable portion is formed at a suitable point in the tear means.
7. A carton according to claim 6, wherein the at least one removable portion is surrounded by perforations.
8. A carton according to claim 6 or 7, when dependent upon claim 5, wherein a removable portion is formed at each of the points where the two tear lines merge into a single tear line.



9. A carton according to any preceding claim, wherein opposed third and fourth wall panels of the carton, extending perpendicular to said first and second wall panels, comprise projections for engaging ends of the reel.

5 10. A packaging carton, substantially as described herein with reference to Figures 2 and 3 of the accompanying drawings.

11. A blank of stiff but foldable board material for forming a packaging carton, comprising a base panel, opposed first and second wall panels intended to extend from  
10 the base panel, a top panel extending between said first and second wall panel, and tear means extending from a first edge of said base panel, traversing said first wall panel, said top panel and said second wall panel and intended to extend to a second edge of said base panel.

15 12. A blank according to claim 11, wherein the tear means comprises two lines of perforations extending through each of the first and second wall panels.

13. A blank according to claim 12, wherein said two tear lines merge in the top panel into a single tear line.

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14. A blank according to claim 13, wherein a removable portion, surrounded by perforations, is formed at each of the points where the two tear lines merge into a single tear line.

25 15. A blank for forming a packaging carton, substantially as described herein with reference to Figure 1 of the accompanying drawings.

16. A method of opening a packaging carton having two tear lines in at least one panel thereof, the method comprising rolling a portion of the panel between the tear  
30 lines so as to tear the tear lines.

17. A method according to claim 16, comprising a further step of separating the remaining portions of the panel outside the tear lines.



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INVESTOR IN PEOPLE

**Application No:** GB 0216886.2  
**Claims searched:** 1 to 15

**Examiner:** Mike Henderson  
**Date of search:** 6 November 2002

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): B8P (PG1)

Int Cl (Ed.7): B65D 5/54

Other: ONLINE: WPI, EPODOC, JAPIO, TXTUS0, TXTUS1, TXTUS2, TXTUS3, TXTEP1, TXTGB1, TXTWO1

**Documents considered to be relevant:**

| Category | Identity of document and relevant passage |   | Relevant to claims |
|----------|---|---|--------------------|
| X        | GB 906904                                 | (KIMBERLY-CLARK CORP) (Whole disclosure relevant) | 1,6,7,11 & 14      |
| X        | EP 0997380A1                              | (SCA EMBALLAGE FRANCE) Whole disclosure relevant) | 1,6,7,11 & 14      |
| X        | US 3886901                                | (ZEITTER) (Whole disclosure relevant)             | 1 to 3,11 & 12     |
| X        | US 3653495                                | (GRAY) (Whole disclosure relevant)                | 1 to 3,11 & 12     |
| X        | US 3263900                                | (LINK et al) (Whole disclosure relevant)          | 1 to 3,11 & 12     |
| X        | US 3002613                                | (MERKEL et al) (Whole disclosure relevant)        | 1 to 3,11 & 12     |

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|---|---|---|--|
| X | Document indicating lack of novelty or inventive step   | A | Document indicating technological background and/or state of the art.  |
| Y | Document indicating lack of inventive step if combined with one or more other documents of same category. | P | Document published on or after the declared priority date but before the filing date of this invention.          |
| & | Member of the same patent family  | E | Patent document published on or after, but with priority date earlier than, the filing date of this application. |